GRADE 3 MATHEMATICS CURRICULUM SPECIFICATIONS
REVISED

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The Mathematics Curriculum Specifications for Grade 3 were prepared in July, 1981, by a committee of classroom teachers, consultants, and Alberta Education personnel under the direction of the Curriculum Branch, Alberta Education. Alberta Education acknowledges with appreciation the contributions of the following members of the Grade 3 Mathematics Committee:

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The following considerations determined the final curriculum specifications for Grade 3:

1. The specifications were based on the *Program of Studies for Elementary Schools, 1978* (amended 1981).

2. Content objectives were used to establish the specifications. Attitudes, interests, and self-concept goals were carefully considered but not listed at this time. [See note following Table 1]

3. Three taxonomic classifications were suggested and defined by the committee:

   Knowledge

   - Testing for knowledge includes exercises involving immediate recall and routine manipulation. This level represents primarily the outcomes which require of the student no decision making or complex memory.

   Comprehension

   - Knowledge of concepts. A concept is an abstraction and as such requires more complex decision making than that involving knowledge of specific facts.

   - Translations. Comprehension involves translating from the concrete to pictorial to symbolic, or translating in the reverse order.

   Application

   - includes the ability to solve problems involving learned skills and concepts.

   - includes the ability to compare, analyze, and apply data.

   - involves the ability to recognize patterns and relationships.

WEIGHTING FACTORS

Table 1 suggests the emphasis in percent that each major content area would receive in testing. The committee did not establish weightings for the three taxonomic levels as it was anticipated that choice of level for testing purposes will be based primarily on where an objective lies within the scope and sequence of the program. An introductory objective would normally require a knowledge item. A teaching or mastery objective, which has had some previous orientation in the program, could be tested by higher level test forms. Table 2, therefore, presents the committee's choice of taxonomic levels for testing content objective and the emphasis in percent that each content objective could receive.

Table 1

Grade 3 Mathematics Emphases for Content Areas

CONTENT AREA	EMPHASIS
NUMBER	35%
OPERATIONS AND PROPERTIES	35%
MEASUREMENT	13%
GEOMETRY	8%
GRAPHING	9%
TOTAL	100%

NOTE: When setting priorities and emphases for each objective in the five content areas listed in Table 1, the committee considered the interaction of attitude and self-concept with the skills and contents outlined. However, the *attitudes* and *self-concept* components of the Program of Studies statements are not listed in these specifications for two reasons:

1. Positive attitudes are realized in large part by providing content and skills appropriate to the developmental level of the child.

2. The Goals and General Objectives of the elementary program cannot be listed as specific to any one grade without regard to the total program. Curriculum revision, now in progress, is giving attention to the definition of the continuous and pervasive processes of mathematical learning.

REVISION PROCESS

The interim edition of these curriculum specifications was distributed in the fall of 1981 with reactions to be returned to the Student Evaluation Branch by December 31, 1981. These reactions were then collated and submitted to the Curriculum Branch for revision of the specifications. The revision committee met in late January and made such changes as were considered necessary.

Table 2

Grade 3 Mathematics Curriculum Specifications

	CONTENT OBJECTIVES	EMPHASES IN PERCENT	TAXONOMIC LEVELS		
			KNOWLEDGE	COMPREHENSION	APPLICATION
NUMBER (35%)	1. Orders and determines "betweenness" of whole numbers (0 - 1 000) and understands symbols >, <, and =, to show relationships.	5	x	x	
	2. Identifies multiples by counting by 2's, 5's, 10's, 25's, 100's (0 - 1 000).	4	x		
	3. Reads and writes numerals (0 - 9 999).	7	x		
	4. Identifies the number of 1 000's, 100's, 10's, 1's, and tenths.	7		x	
	5. Rewrites numbers in expanded notation (0 - 1 000) and vice versa.	7		x	
	6. Reads and writes decimals to tenths.	1	x		
	7. Identifies, writes and compares fractions from physical representation (halves, quarters, tenths, and fifths).	4	x	x	
OPERATIONS AND PROPERTIES (35%)	1. Identifies additive, subtractive, multiplicative and divisive situations.	2	x	x	
	2. Adds and subtracts two-digit or three-digit numbers with and without regrouping.	8	x	x	
	3. Symbolizes multiplication and division situations.	2		x	
	4. Identifies related sentences for addition, subtraction, multiplication and division.	2	x		
	5. Understands the basis of the commutative property of addition and multiplication.	2	x	x	
	6. Understands the unique effect of 0 and 1 in addition and multiplication respectively.	2	x		

	CONTENT OBJECTIVES	EMPHASES IN PERCENT	TAXONOMIC LEVELS		
			KNOWLEDGE	COMPREHENSION	APPLICATION
	7. Demonstrates mastery of basic facts involving sums, minuends, products and dividends to 18.	7	x		
	8. Multiplies whole numbers by 10 and 100.	1	x		
	9. Solves word problems. Estimates answers.	9			x
MEASUREMENT (13%)	1. Tells and writes the time to the nearest hour, half hour, quarter hour and five minute intervals.	3	x		
	2. Knows the months of the year, in order.	1	x		
	3. Uses noon, midnight, a.m. and p.m.	1		x	
	4. Counts collections of coins up to $1.00.	2	x		
	5. Makes purchases and change up to $1.00.	2		x	
	6. Reads Celsius thermometer to one degree intervals.	1	x		
	7. Extends estimation and measurement to include the use of the standard units km, dm.	1	x		
	8. Uses standard instruments (metre stick, litre container, mass scales, calendar, Celsius thermometer).	2			x
	9. Expresses linear measurement to the nearest tenth.	-			

	CONTENT OBJECTIVES	EMPHASES IN PERCENT	TAXONOMIC LEVELS		
			KNOWLEDGE	COMPREHENSION	APPLICATION
GEOMETRY (8%)	1. Classifies and identifies 2-dimensional figures and 3-dimensional objects.	4	x		
	2. Constructs 2-dimensional figures using straws, pipecleaners, wires, geoboards, etc.	2			x
	3. Constructs 3-dimensional objects with plasticine or modelling clay.	2			x
	4. Recognizes corresponding parts in polygons.	-	x		
GRAPHING (9%)	1. Identifies the axes.	1	x		
	2. Collects data and constructs simple bar, line and pictographs.	4			x
	3. Locates position of an object on a grid.	4	x		
	4. Plots points on a grid when given the two coordinates.	-		x	
	TOTAL	100			